

PNEUMATIC/COOLANT MODULE

95631, Rev 02

November 19, 2018

648 Saratoga Road
Glenville, NY 12302 USA
Phone: +1 518 384 1000
Fax: +1 518 384 1200
www.appliedrobotics.com

REVISION

Revision	Date	Author	Description
00	04/20/2018	SC	Initial Release
01	05/16/2018	DS	Added attachments
02	11/19/2018	DS	Updated images

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1 PRECAUTIONS



READ MANUAL

Do not start, operate or service machine until you read and understand operator's manual. Failure to do so could result in serious injury.



HAND CRUSH NOTICE

Indicates the possibility for a crush force between components during coupling of the Robot and Tool Adaptor.



Indicates a hazardous situation which, if not avoided, will result in death or serious injury.



Indicates a hazardous situation which, if not avoided, could result in death or serious injury.



Indicates a hazardous situation which, if not avoided, could result in minor or moderate injury.



Indicates a situation which, if not avoided, could result in equipment damage and voiding the manufacturer's equipment warranty.

IGNORING INFORMATION ABOUT POTENTIAL HAZARDS CAN LEAD TO SERIOUS HARM TO PERSONNEL AND/OR DAMAGE TO THE EQUIPMENT, AND MAY RESULT IN THE NULLIFICATION OF THE MANUFACTURER'S EQUIPMENT WARRANTY.

HEED ALL PRECAUTION NOTICES

2 SYSTEM DESCRIPTIONS

The Pneumatic/Coolant Module provides a reliable pass through of user supplied fluid connections.

Pneumatic Module – The pneumatic pass through module consists of a Robot Side module and Tool Side module. Both the Robot Side and Tool Side contain valved/checked fittings that are self-closing and leak free, and seal when the Tool Changer is disconnected, eliminating the need for an additional shut-off valve, maintaining constant air to the Valve Module. Additionally, the Robot Side module contains an integrated 6mm push-to-connect fitting for air supply to APPLIED ROBOTICS' Valve Module. (See Manual 95629 for more information.)

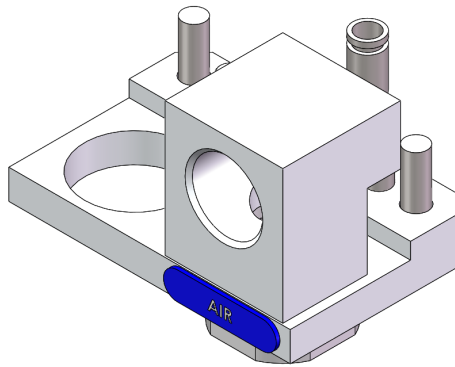


Figure 2-1.
Robot Side Pneumatic Module

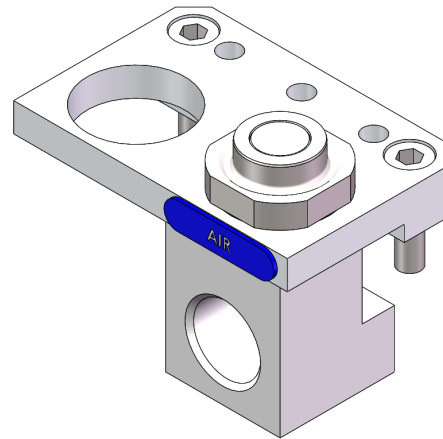


Figure 2-2.
Tool Side Pneumatic Module

Coolant Module – The coolant pass through module consists of a Robot Side module and Tool Side module. Both the Robot Side and Tool Side contain extended valved/checked fittings that are self-closing and leak free, and seal when the Tool Changer is disconnected, eliminating the need for an additional shut-off valve and preventing water from leaking.

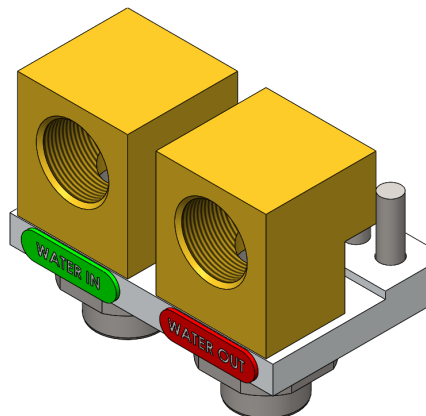


Figure 2-3.
Robot Side Coolant Module

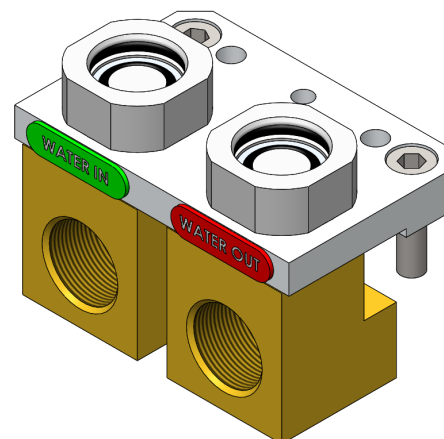
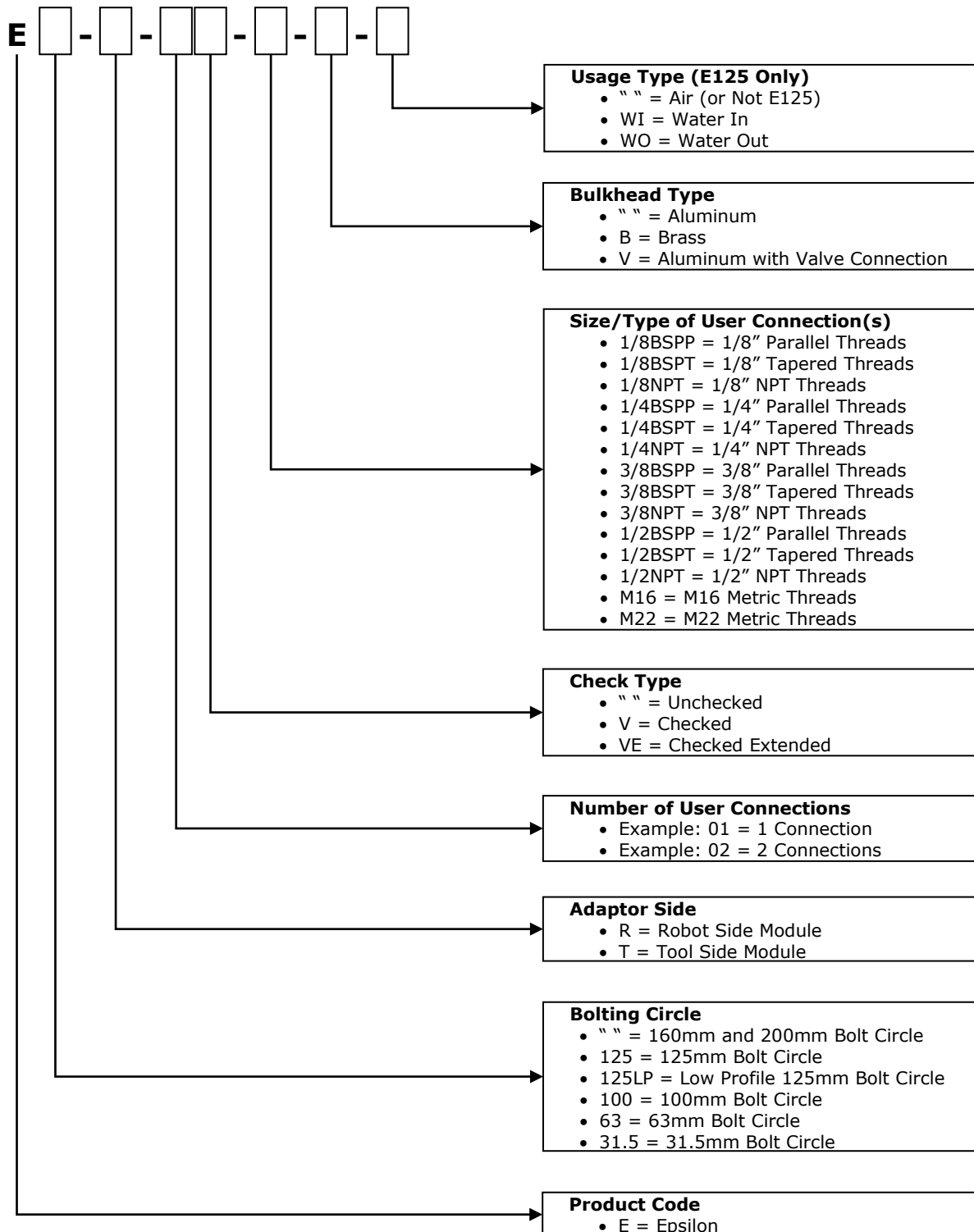


Figure 2-4.
Tool Side Coolant Module

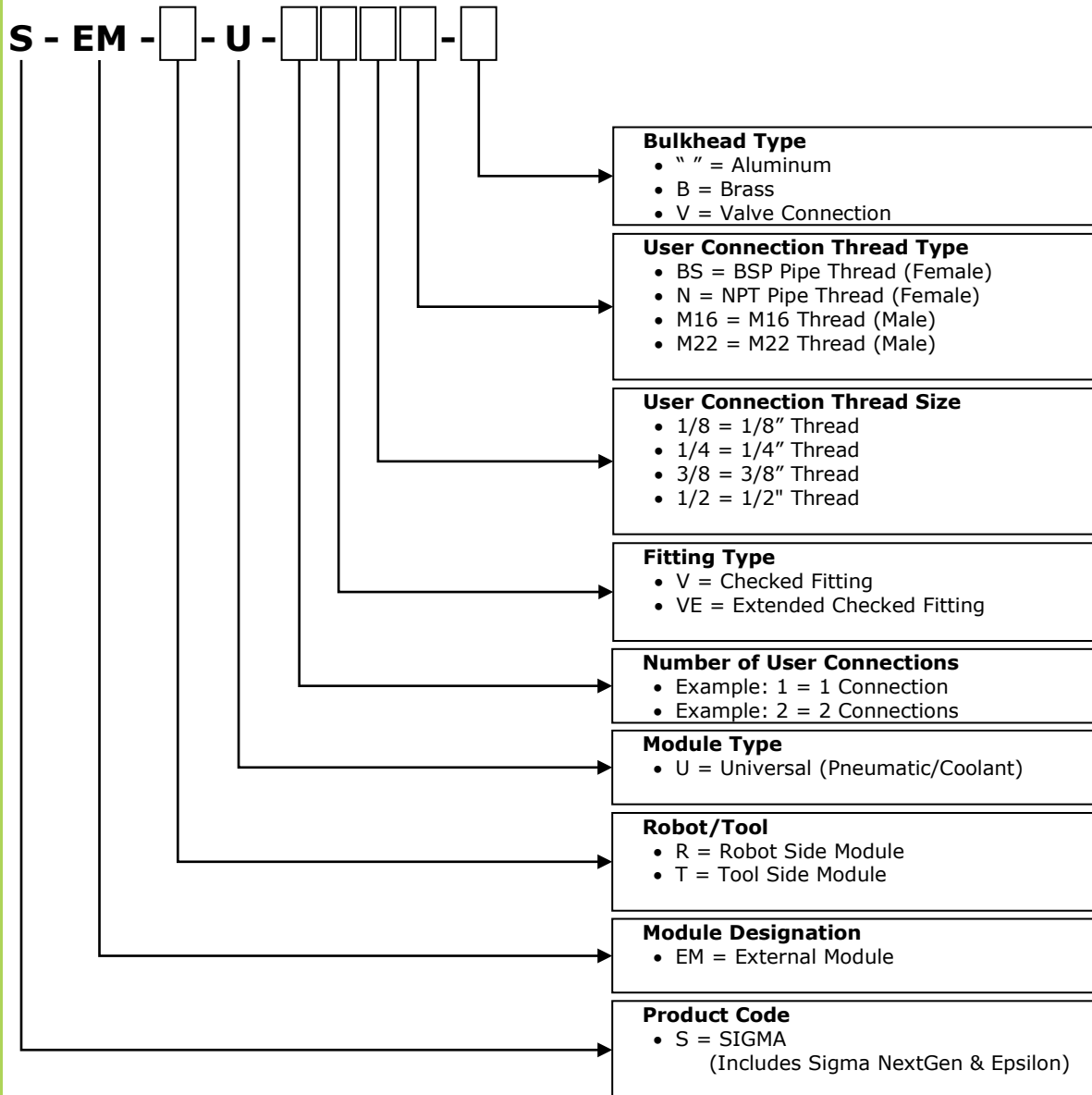
2.1 PNEUMATIC/COOLANT MODULE 1



Custom/Special: E□-□-□□-□-□-□-□

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(dash) if that is the only
input between dashes.

2.2 PNEUMATIC/COOLANT MODULE 2



3 TECHNICAL SPECIFICATIONS

Table 3-1. Pneumatic Module Technical Specifications

Specification		Metric	English
Height (Robot and Tool Coupled)		101.4 mm	3.99 in
Mass / Weight *	Robot	0.22 kg	0.48 lb
	Tool	0.21 kg	0.46 lb
Operating Temperature		5 to 60 °C	40 to 140 °F
User Pneumatic Pressure Range		0 to 7 bar	0 to 101 psi
Flow (CFM)		**Contact Applications Engineering**	

* 1 User Connection, which is standard.

Table 3-2. Coolant Module Technical Specifications

Specification		Metric	English
Height (Robot and Tool Coupled)		106.4 mm	4.19 in
Mass / Weight *	Robot	0.64 kg	1.41 lb
	Tool	0.64 kg	1.41 lb
Operating Temperature		5 to 60 °C	40 to 140 °F
User Pneumatic Pressure Range		0 to 7 bar	0 to 101 psi
Flow (CFM)		**Contact Applications Engineering**	

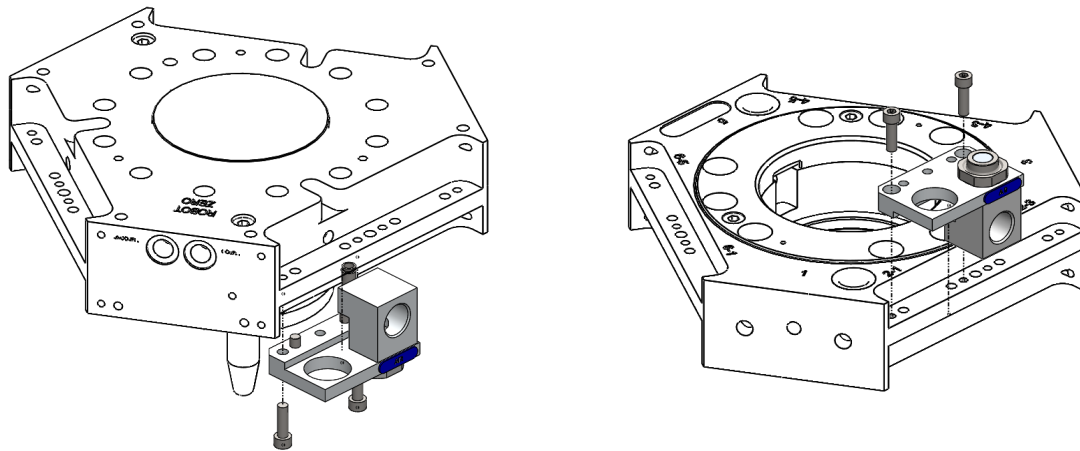
* 2 User Connections, which is standard.

4 INSTALLATION

The Pneumatic/Coolant Module is designed to mount directly to APPLIED ROBOTICS' Sigma, Sigma NextGen, and Epsilon (E125, E160, ES160, & ES200) Tool Change Systems.

The Pneumatic/Coolant Module can be installed on any long side mounting position of the Sigma, Sigma NextGen, or Epsilon Tool Changer. That is, Positions 2-1, 2-3, 4-3, 4-5, 6-5, or 6-1 for the Sigma, Sigma NextGen, and Epsilon E160, ES160, and ES200 Tool Changers, and Positions 2, 2-1, 2-3, 4, 4-1, or 4-3 for the Epsilon E125 Tool Changer. See applicable Tool Changer manual.

To install the Pneumatic/Coolant Module, locate the module using the two installed M6 dowels and fasten the module to the mounting position using the M6 socket head cap screws, supplied with the module (See Figure 4-1).



ROBOT SIDE

TOOL SIDE

**Figure 4-1. Pneumatic/Coolant Module Installation
(Pneumatic Module Shown)**

If using a Pneumatic Module that is compatible with an APPLIED ROBOTICS External Valve Module (S.1-EM-R-V-PB) or Safety Control Module (S-EM-R/T-E-SCM-*), install a 6mm tube (supplied with Pneumatic Module) between the Pneumatic Module and supplied valve module (See Figure 4-2).

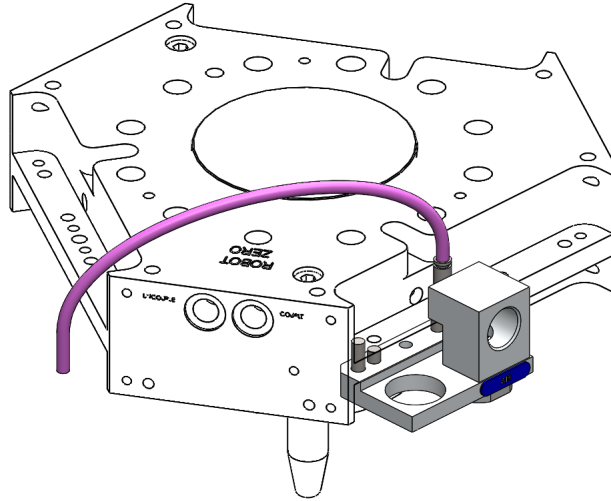


Figure 4-2. Tube Installation for External Valve Module

NOTICE

**REFER TO THE TOOL CHANGER MANUAL
APPROPRIATE FOR YOUR APPLICATION
BEFORE SUPPLYING AIR PRESSURE TO THE
VALVE MODULE.**

5 GUIDE TO OPERATION

The two halves of the Pneumatic/Coolant Module mate when the Robot Side of the Tool Changer goes to dock a tool. The two halves work together via spring return self-closing ports. The ports open when the Tool Changer docks and self-close when the Tool Changer undocks.

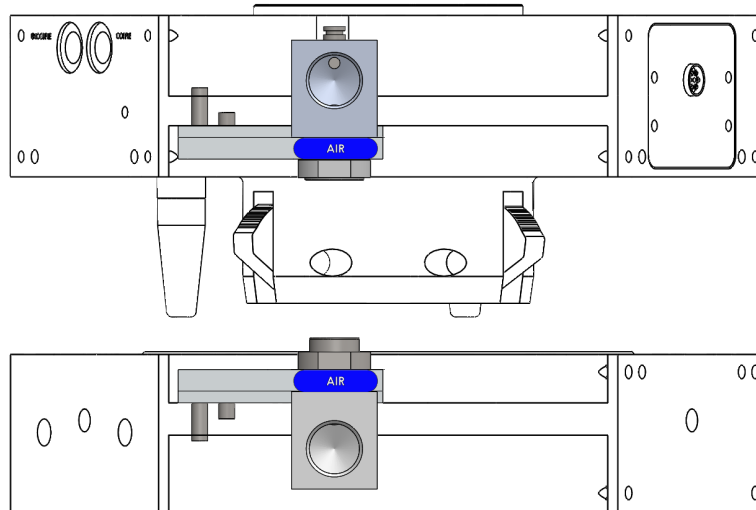


Figure 5-1. Tool Changer Undocked

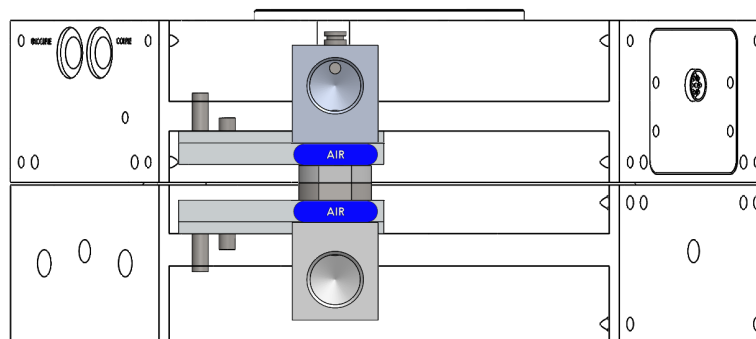


Figure 5-2. Tool Changer Docked

5.1 MODULE CONNECTORS

The shape of module connectors can affect the pressure drop of the system and should be considered. For example, a 90-degree connector will increase the pressure drop of the system compared to a straight connector due to the total loss coefficient. Therefore, if using a 90-degree connector, select one with a low loss coefficient to minimize the overall pressure drop.

6 TROUBLESHOOTING

6.1 TROUBLESHOOTING GUIDE

Fitting – Pneumatic/Coolant		
Symptom	Possible Cause	Resolution
Fluid leaking from Fittings	Fitting dry	Lubrication (See Section 7.1.1)
	O-Rings worn or sheared	Fitting Replacement (See Section 9.1)

6.2 TECHNICAL SUPPORT

If you require assistance, contact APPLIED ROBOTICS Technical Support Department at:

Phone: +1 518 384 1000
E-mail: techsupport@appliedrobotics.com

7 MAINTENANCE

NOTICE

FAILURE TO FOLLOW THE MAINTENANCE SCHEDULE DESCRIBED IN THIS SECTION COULD ALTER OR VOID THE WARRANTY PROVIDED BY APPLIED ROBOTICS, INC.

The following table provides a schedule for preventive maintenance to be performed for the Pneumatic/Coolant Module.

Table 7-1. Preventive Maintenance Schedule

Frequency of Maintenance	Preventative Maintenance
Every 2 Weeks	Visual Checks
250,000 Cycles	Visual Checks & Lubrication (Section 7.1.1)
500,000 Cycles	
750,000 Cycles	
1,000,000 Cycles	
1,250,000 Cycles	Lubrication (Section 7.1.1) & Visual Checks & Replace if worn or damaged parts (Sections 9.1)
1,500,000 Cycles	
1,750,000 Cycles	
2,000,000 Cycles ¹	

¹ Continue Lubrication and Visual Checks every 250,000 Cycles. Continue inspecting for wear or damaged components every 500,000 cycles.

7.1 PREVENTIVE MAINTENANCE

7.1.1 Lubrication

Proper lubrication of O-rings and sealing surfaces is essential to maintaining the performance and prolonging the operational life of the Pneumatic/Coolant Module. A generous amount of lube placed on the female fitting will lubricate both fittings after the first engagement (See Figure 7.1.1-1 Lube Female Fitting).

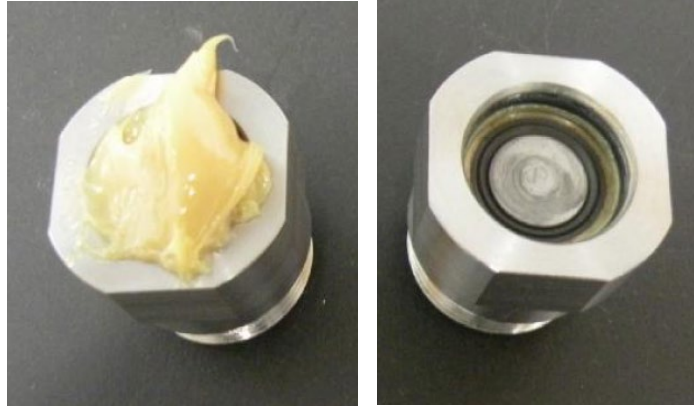


Figure 7.1.1-1 Lube Female Fitting

7.1.2 Lubricant Specifications

Lubricant	ARI Part #	Manufacturer	Manufacturer's Part #
Staburags NBU 30 Grease or White EP Bearing Grease	0903-P11N or 96503-P1018	Kluber or Dow Corning	NBU 30 or White EP Bearing Grease

8 SPARE PARTS

The spare parts listed below are recommended to be maintained in stock for the life of the Pneumatic/Coolant Module. These quantities are based on a single unit. If higher quantities are purchased, please contact the Technical Support Department at +1 518 384 1000 or techsupport@appliedrobotics.com to determine the quantity of spares recommended for the size of your installation.

UNIVERSAL MODULE (PER MODULE)				
Module	Side	Description	Part Number	Model Number
Pneumatic	Robot	LOW PROFILE FITTING, FEMALE	99503-C1076A	LPF-08F-SS
	Tool	LOW PROFILE FITTING, MALE	99503-C1075A	LPF-08M-SS
Coolant	Robot	LOW PROFILE EXTENDED FITTING, MALE	0509-C39A	LPF-08M-SS-EXTENDED
	Tool	LOW PROFILE EXTENDED FITTING, FEMALE	0509-C38A	LPF-08F-SS-EXTENDED

9 SPARE PARTS REPLACEMENT

The following procedures explain the correct method for removing and replacing the recommended spare parts listed in Section 8 of this manual.

9.1 FITTING REPLACEMENT

1. Remove Universal Module from Adaptor by removing the M6 socket head cap screws using a 5mm Allen wrench.
2. Remove hoses and fittings connected to Bulkhead Adaptors.
3. Unthread and remove fittings from Bulkhead Adaptors.
4. Install new fittings by threading them into the Bulkhead Adaptors through the Carrier Plate. Tighten fitting until snug. Ensure O-ring on fitting seals to Bulkhead Adaptors.
5. Apply Loctite 242, or equivalent, to the threads of the socket head cap screws before installing.
6. Mount Universal Module to Adaptor by threading the M6 socket head cap screws through the Carrier Plate into the Adaptor.

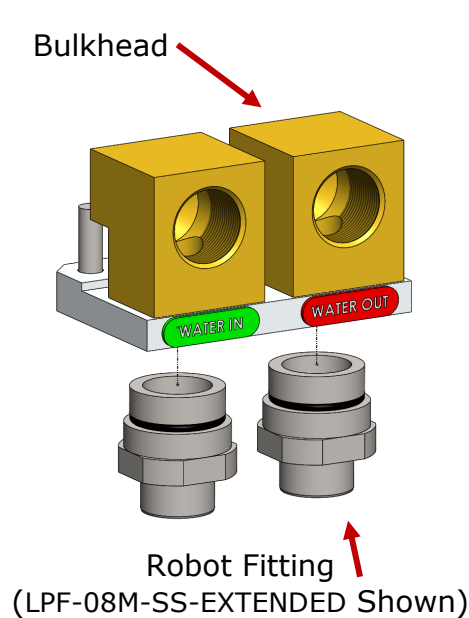


Figure 9.1-1. Robot Side Fitting Replacement

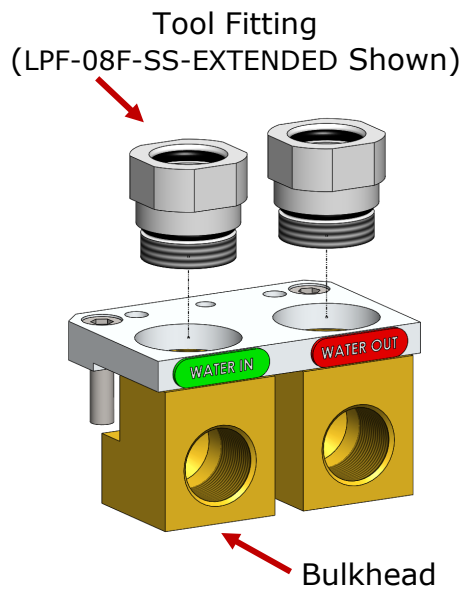


Figure 9.1-2. Tool Side Fitting Replacement

NOTICE

**M6 SOCKET HEAD CAP SCREWS
HAVE A RECOMMENDED TORQUE
OF 13.1 Nm (116 in-lb).**

10 INFORMATIONAL DOCUMENTS

The documents in this section can assist with installation, use, and identification of replacement parts for the Pneumatic/Coolant Module. Please contact **APPLIED ROBOTICS Technical Support** if you have any questions.

DECLARATIONS	
Declaration of Incorporation for Partly Completed Machinery	

DRAWINGS		
MODULE	DRAWING NUMBER	DESCRIPTION
Pneumatic	0707-C83A	S-EM-R-U-1V1/2BS-V
	0707-C84A	S-EM-T-U-1V1/2BS
	1604-C01A	ER125-U-1V1/2BS
	1604-C03A	ER125-U-1V1/2BS-V
	1604-C02A	ET125-U-1V1/2BS
Coolant	0603-C13A	S-EM-R-U-2VE1/2BS-B XChange EXTERNAL COOLANT/PNEUMATIC MODULE
	0603-C14A	S-EM-T-U-2VE1/2BS-B XChange EXTERNAL COOLANT/PNEUMATIC MODULE
	1505-C21A	ER125-U-01VE-1/2BSPP-B-WI
	1505-C22A	ET125-U-01VE-1/2BSPP-B-WI
	1800585A	ER125-U-01VE-1/2BSPP-B-WO
	1800586A	ET125-U-01VE-1/2BSPP-B-WO

Declaration of Incorporation of Partly Completed Machinery (Annex II 1 B of EC Machinery Directive 2006/42/EC)

Description and identification of the partly completed machinery:

XChange – EPSILON Series Tool Changers & Utility Modules

Fulfills the following function:

Allows industrial robots (and other automated equipment) to automatically change their end of arm tooling under programmed control without the need of human intervention. These products are intended to be incorporated into machinery supplied by others.

The following essential requirements of EC Machinery Directive 2006/42/EC (Annex I) have been applied and fulfilled:

Section 1.1.2.	Principles of safety integration
Section 1.1.3.	Materials and products
Section 1.1.5.	Design of machinery to facilitate its handling
Section 1.2.1.	Safety and reliability of control systems
Section 1.2.6.	Failure of the power supply
Section 1.3.2	Risk of break-up during operation
Section 1.3.3.	Risks due to falling or ejected objects
Section 1.3.4.	Risks due to surfaces, edges or angles
Section 1.3.7.	Risks related to moving parts
Section 1.3.9.	Risks of uncontrolled movements
Section 1.5.1.	Risks due to electricity supply
Section 1.5.3.	Risks due to energy supply other than electricity (air pressure)
Section 1.5.8.	Risks due to noise
Section 1.5.10.	Risks due to non-ionizing radiation
Section 1.6.4.	Operator intervention
Section 1.7.1.	Information and warnings on the machinery
Section 1.7.2.	Warning of residual risks
Section 1.7.3.	Marking of machinery
Section 1.7.4.	Instructions.

The partly completed machinery has been designed and manufactured according to the following harmonized standards:

EN ISO 12100-1	Safety of machinery - Basic concepts, general principles for design Part 1: Basic terminology, methodology
EN ISO 12100-2	Safety of machinery - Basic concepts, general principles for design Part 2: technical principles

EN ISO 10218-2	Robots and robotic devices — Safety requirements for industrial robots — Part 2: Robot systems and integration
EN ISO 60204-1	Safety of machinery. Electrical equipment of machines. General requirements
EN 61000-6-2	Electromagnetic compatibility (EMC) - Generic standards. Immunity for industrial environments
EN 61000-6-4	Electromagnetic compatibility (EMC) - Generic standards. Emission standard for industrial environments
EN 61000-4-2	Electromagnetic compatibility (EMC). Testing and measurement techniques. Electrostatic discharge immunity test
EN 61010-1	Safety requirements for electrical equipment for measurement, control, and laboratory use -- Part 1: General requirements

The relevant technical documentation has been compiled in accordance with Annex VII, Part B of EC Machinery Directive 2006/42/EC. We undertake, in response to a reasoned request, to supply it in electronic form to the market surveillance authorities within a reasonable period.

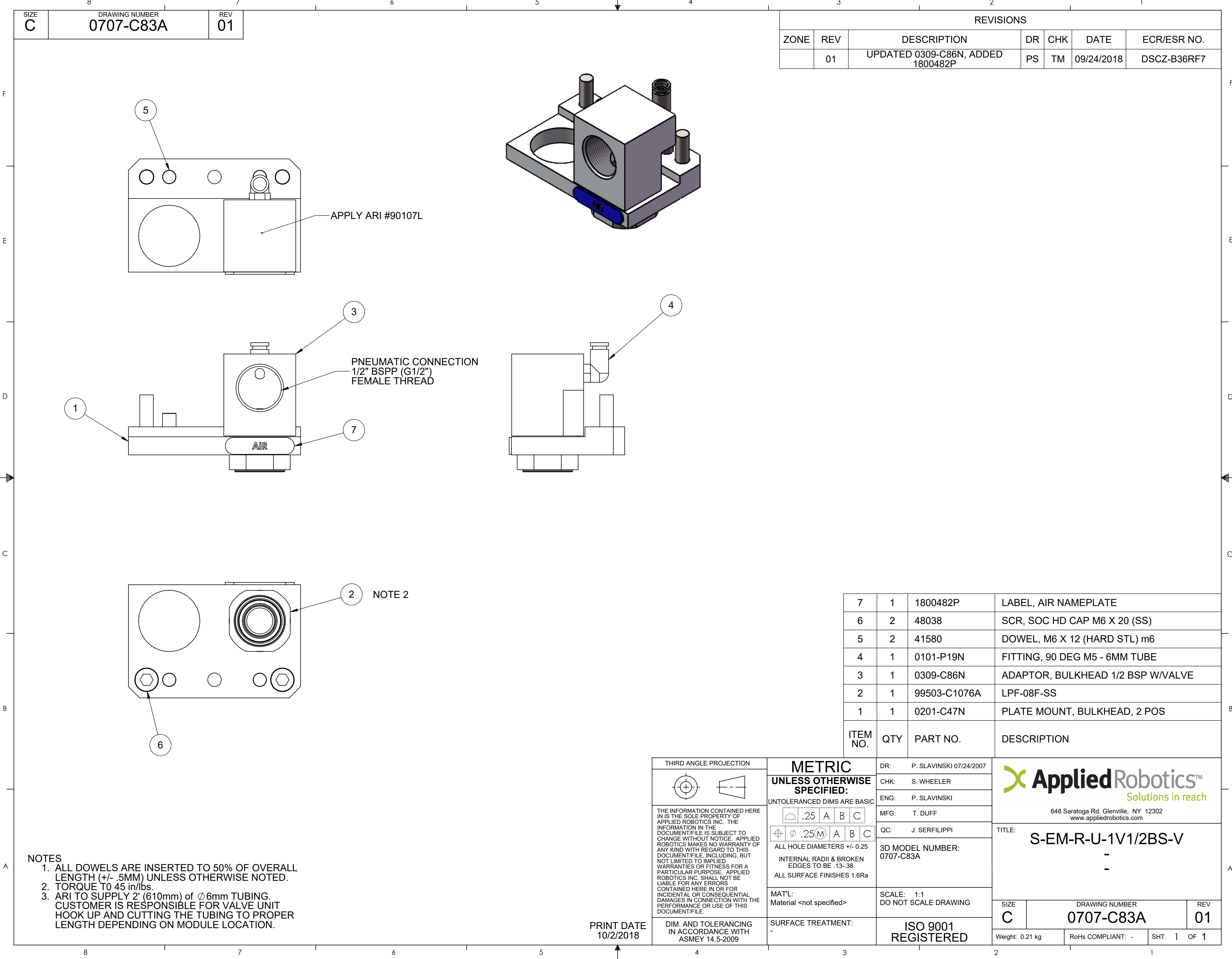
The party authorized to compile the technical documentation is:

Giovanni Patrini, at Effecto Group SpA

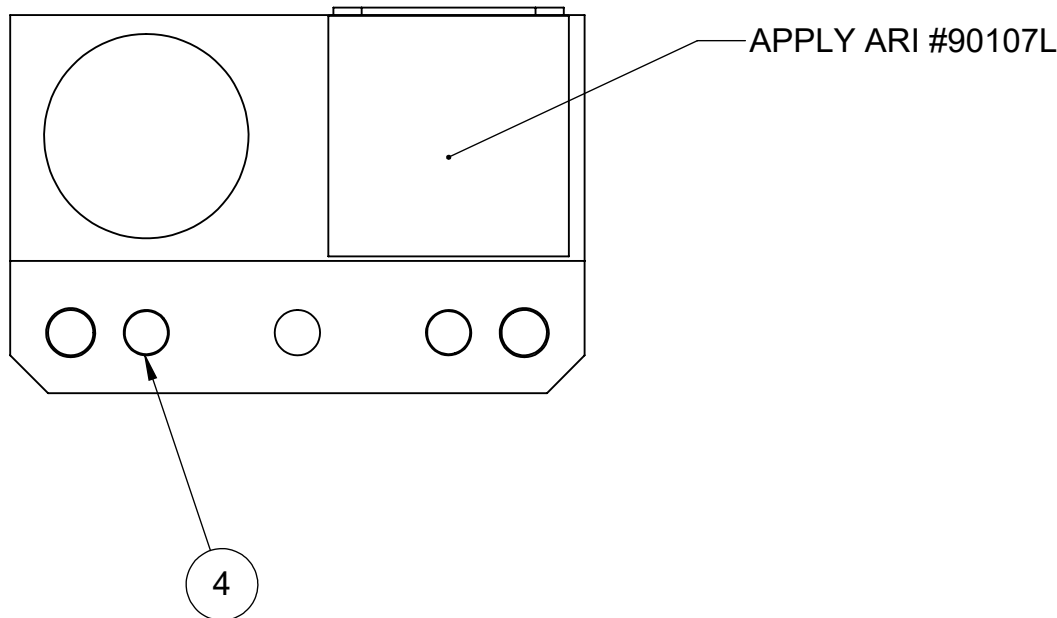
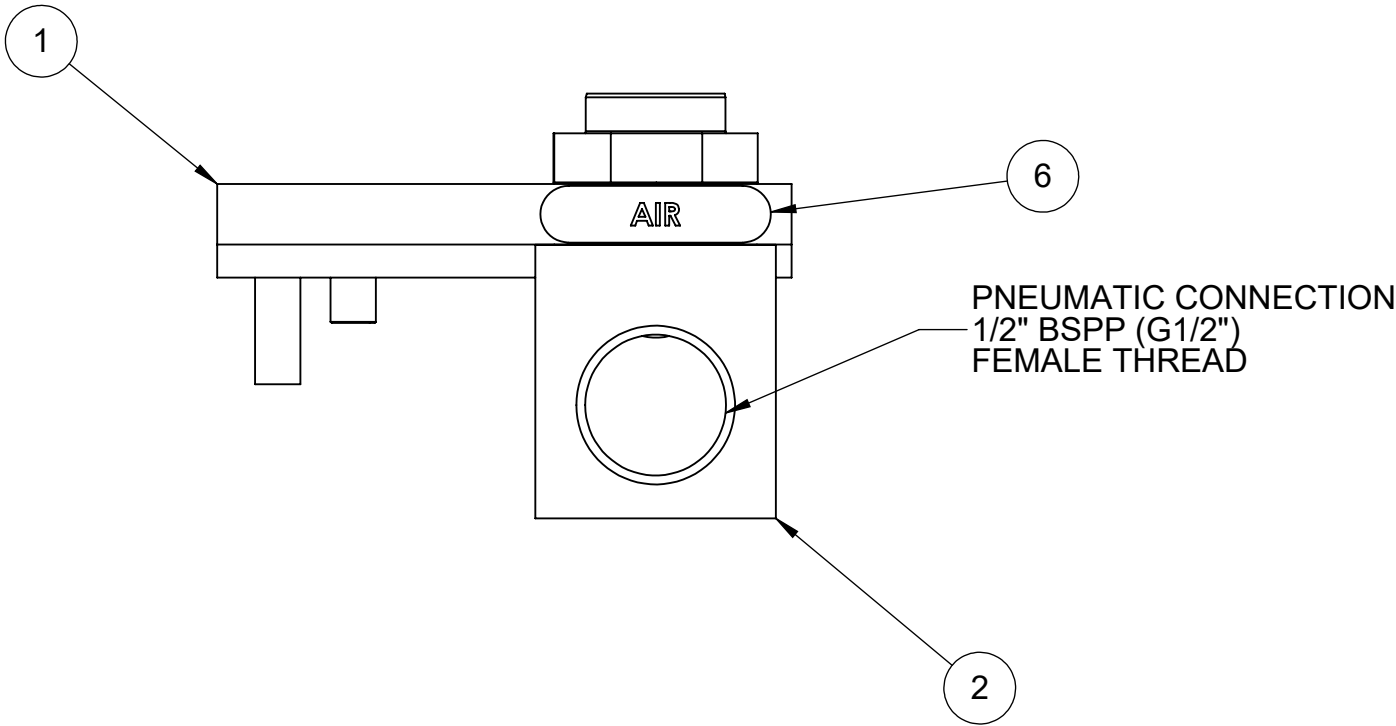
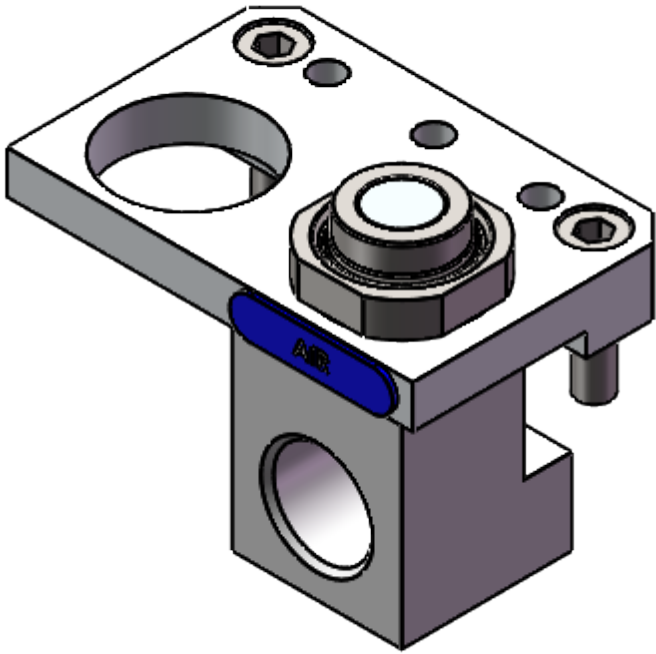
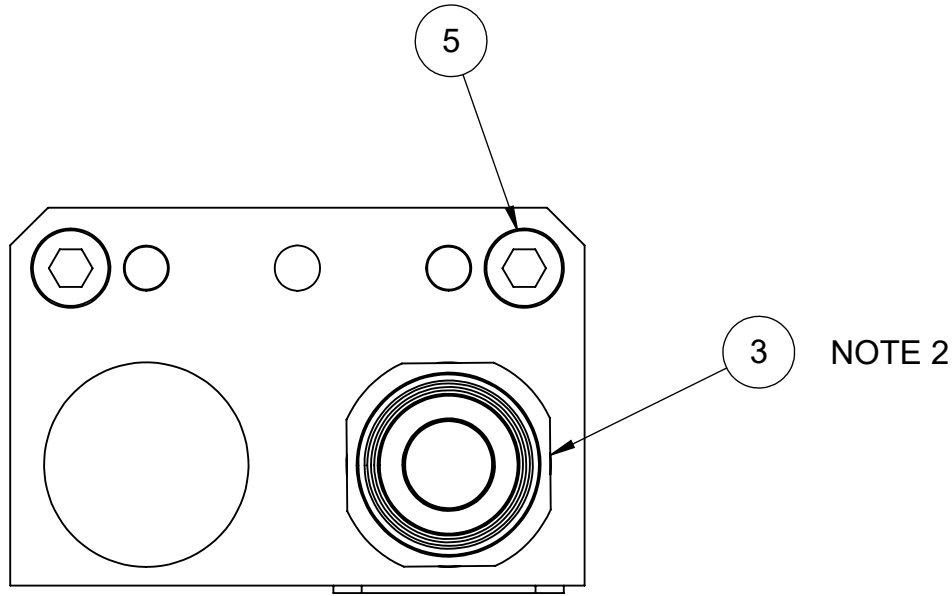
The partly completed machinery must not be put into service until the final machinery into which it is to be incorporated has been declared in conformity with the provisions of the Machinery Directive.


Stefan Casey
Vice President, Engineering

APRIL 20, 2018
Date



REVISIONS						
ZONE	REV	DESCRIPTION	DR	CHK	DATE	ECR/ESR NO.
	01	UPDATED 0105-C22N, ADDED 1800482P	PS	TM	09/24/2018	DSCZ-B36RF7



6	1	1800482P	LABEL, AIR NAMEPLATE
5	2	48038	SCR, SOC HD CAP M6 X 20 (SS)
4	2	41580	DOWEL, M6 X 12 (HARD STL) m6
3	1	99503-C1075A	LPF-08M-SS
2	1	0105-C22N	ADAPTER, BULKHEAD (ALUM) 1/2" BSPP ROTATABLE
1	1	0201-C47N	PLATE MOUNT, BULKHEAD, 2 POS
ITEM NO.	QTY	PART NO.	DESCRIPTION

NOTES

1. ALL DOWELS ARE INSERTED TO 50% OF OVERALL LENGTH (+/- .5MM) UNLESS OTHERWISE NOTED.
2. TORQUE TO 45 in/lbs.

PRINT DATE
10/2/2018

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DIM. AND TOLERANCING IN ACCORDANCE WITH ASMEY 14.5-2009

METRIC

UNLESS OTHERWISE SPECIFIED:

UNTOLERANCED DIMS ARE BASIC

	.25	A	B	C
	φ .25	A	B	C

ALL HOLE DIAMETERS +/- 0.25

INTERNAL RADII & BROKEN EDGES TO BE .13-.38

ALL SURFACE FINISHES 1.6Ra

MAT'L:
Material <not specified>

SURFACE TREATMENT:
-

DR: P. SLAVINSKI 07/24/2007

CHK: S. WHEELER

ENG: P. SLAVINSKI

MFG: T. DUFF

QC: J. SERFILIPPI

3D MODEL NUMBER:
0707-C84A

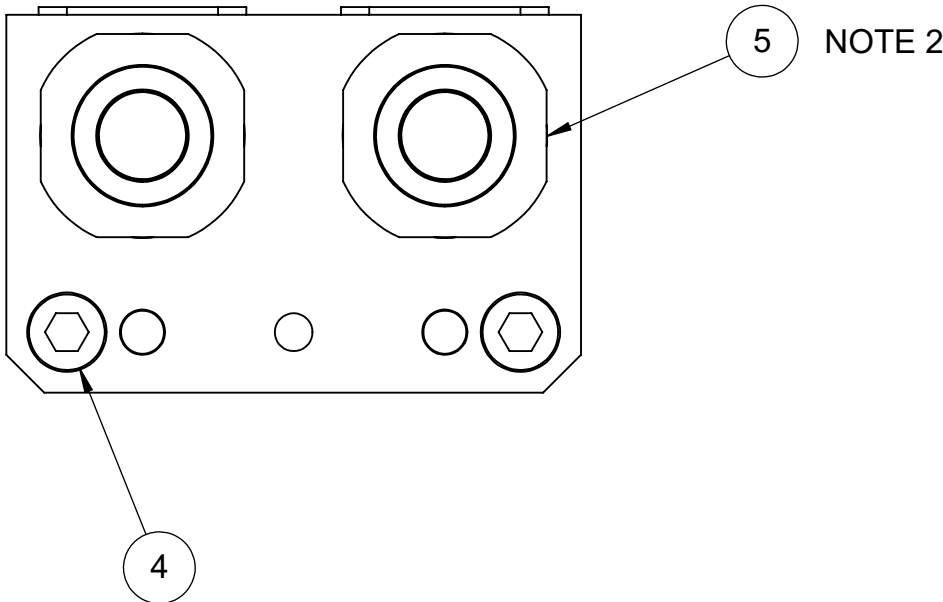
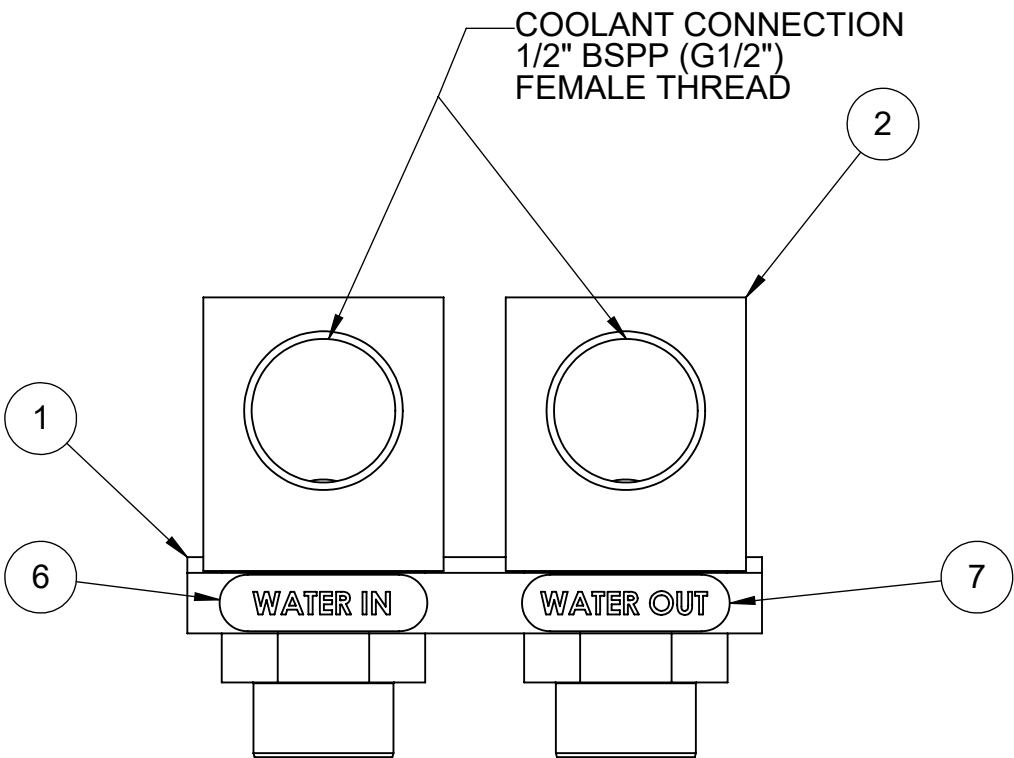
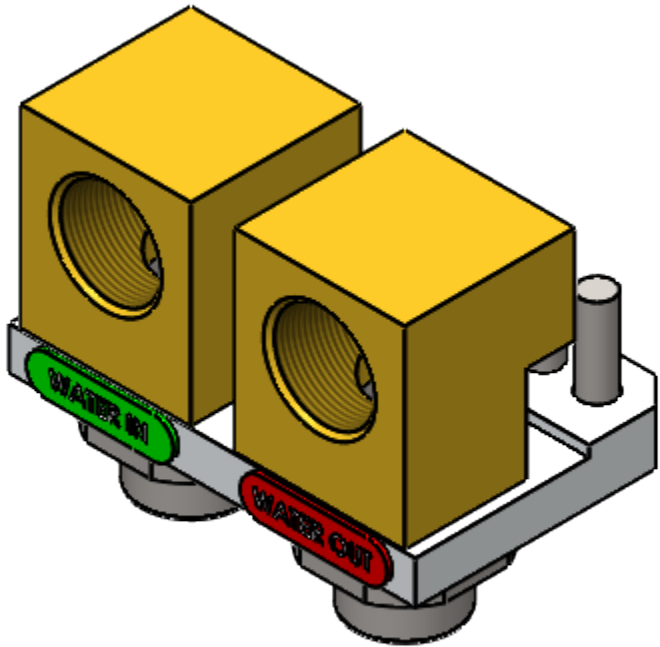
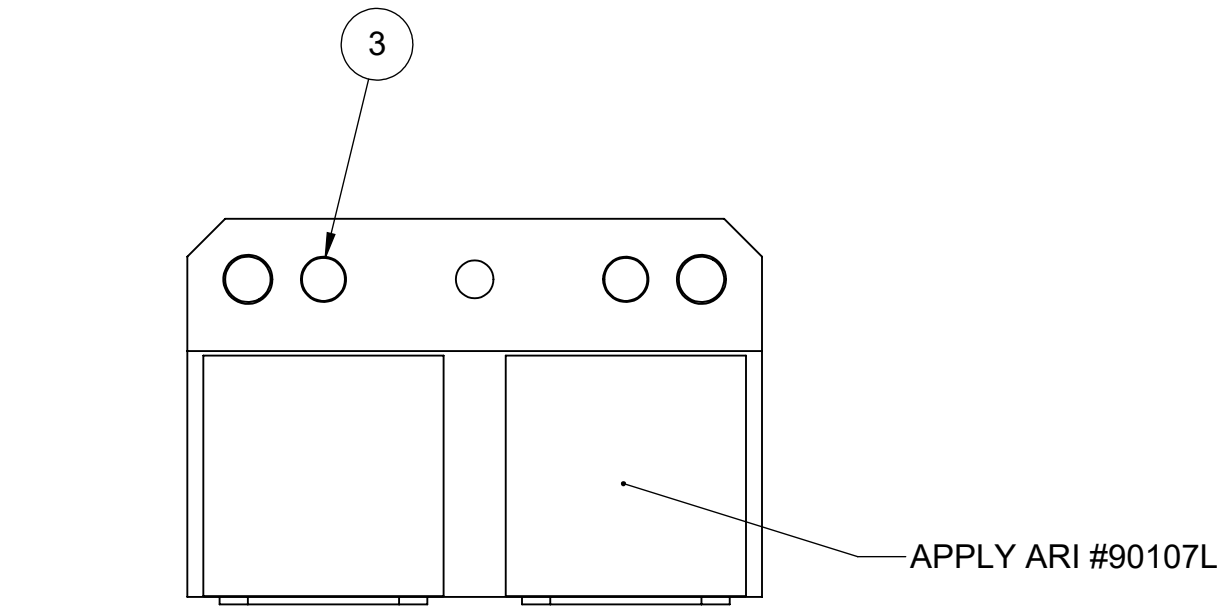
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ISO 9001
REGISTERED

648 Saratoga Rd. Glenville, NY 12302
www.appliedrobotics.com

TITLE:
**S-EM-T-U-1V1/2BS
XChange EXTERNAL
COOLANT/PNEUMATIC
MODULE**

SIZE C	DRAWING NUMBER 0707-C84A	REV 01
Weight: 0.21 kg	RoHs COMPLIANT: -	SHT. 1 OF 1



- NOTES
1. ALL DOWELS ARE INSERTED TO 50% OF OVERALL LENGTH (+/- .5MM) UNLESS OTHERWISE NOTED.
 2. TORQUE TO 45 in/lbs.

PRINT DATE
10/2/2018

REVISIONS						
ZONE	REV	DESCRIPTION	DR	CHK	DATE	ECR/ESR NO.
	01	ITEM #2 0908-C08N WAS 0302-C45N	RM	JV	10/06/2010	WZEH-89WPGQ
	02	UPDATED 0908-C08N, ADDED 1800480P & 1800481P	PS	TM	09/24/2018	DSCZ-B36RF7

7	1	1800481P	LABEL, WATER OUT NAMEPLATE
6	1	1800480P	LABEL, WATER IN NAMEPLATE
5	2	0509-C39A	LPF-08M-SS-EXTENDED
4	2	48038	SCR, SOC HD CAP M6 X 20 (SS)
3	2	41580	DOWEL, M6 X 12 (HARD STL) m6
2	2	0908-C08N	ADAPTER, BULKHEAD 1/2 BSP BRASS ROTATABLE
1	1	0508-C93N	PLATE MOUNT, BULKHEAD EXTENDED
ITEM NO.	QTY	PART NO.	DESCRIPTION

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METRIC

UNLESS OTHERWISE SPECIFIED:

UNTOLERANCED DIMS ARE BASIC

	.25	A	B	C
	φ .25(M)	A	B	C

ALL HOLE DIAMETERS +/- 0.25

INTERNAL RADII & BROKEN EDGES TO BE .13-.38

ALL SURFACE FINISHES 1.6Ra

MAT'L:
Material <not specified>

SURFACE TREATMENT:

DR: T. MARCELLA 03/06/2006

CHK: J. VALLELUNGA

ENG: T. MARCELLA

MFG: T. DUFF

QC: J. SERFILIPPI

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0603-C13A

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ISO 9001
REGISTERED

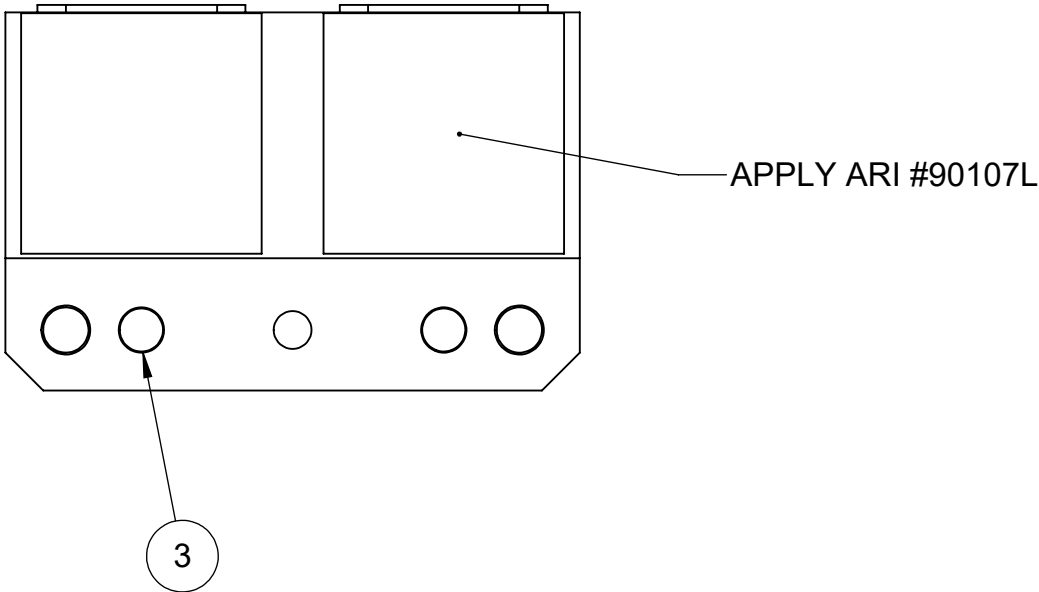
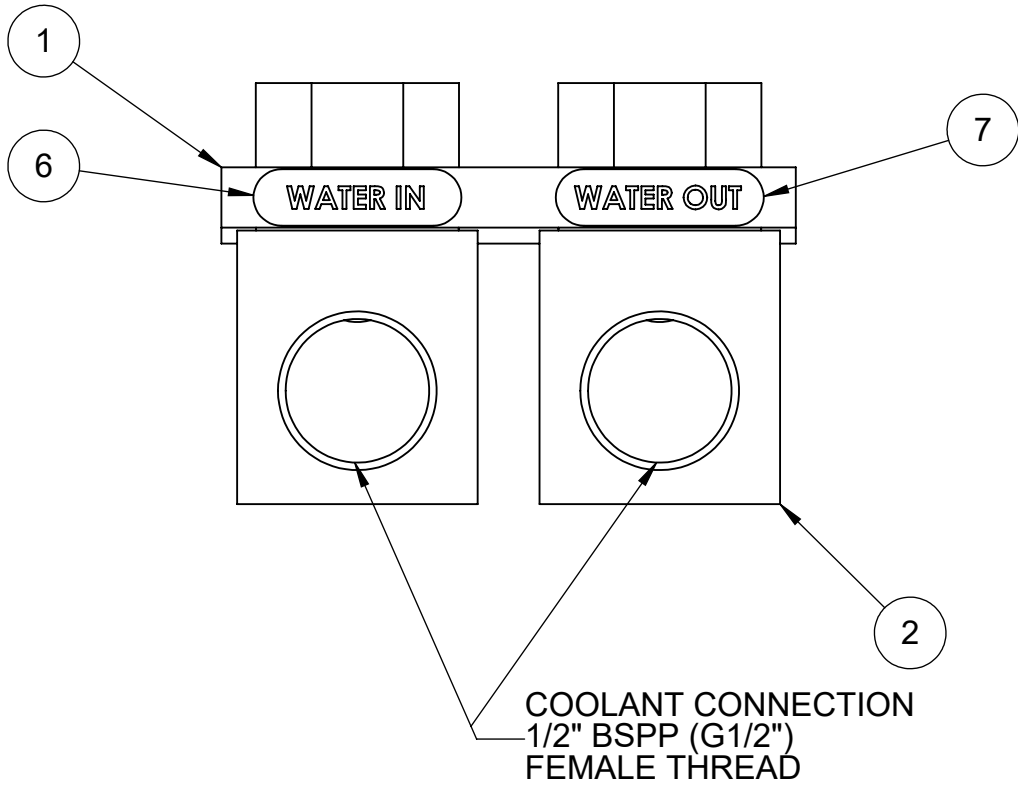
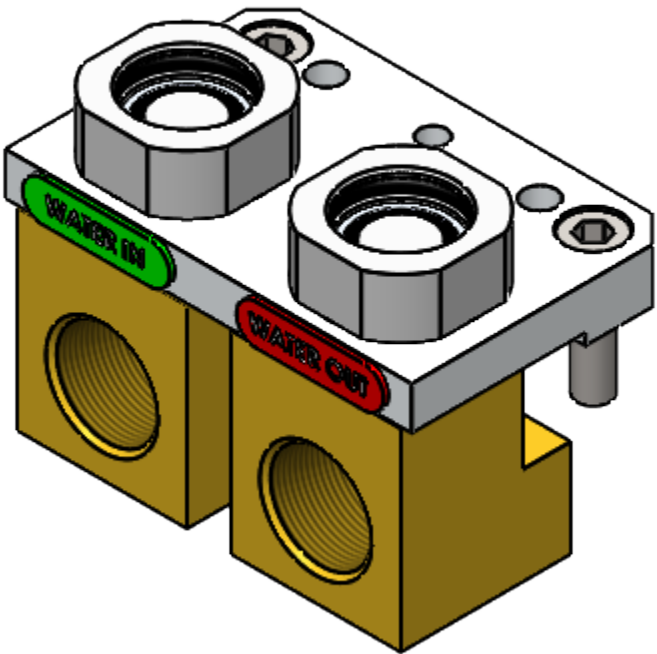
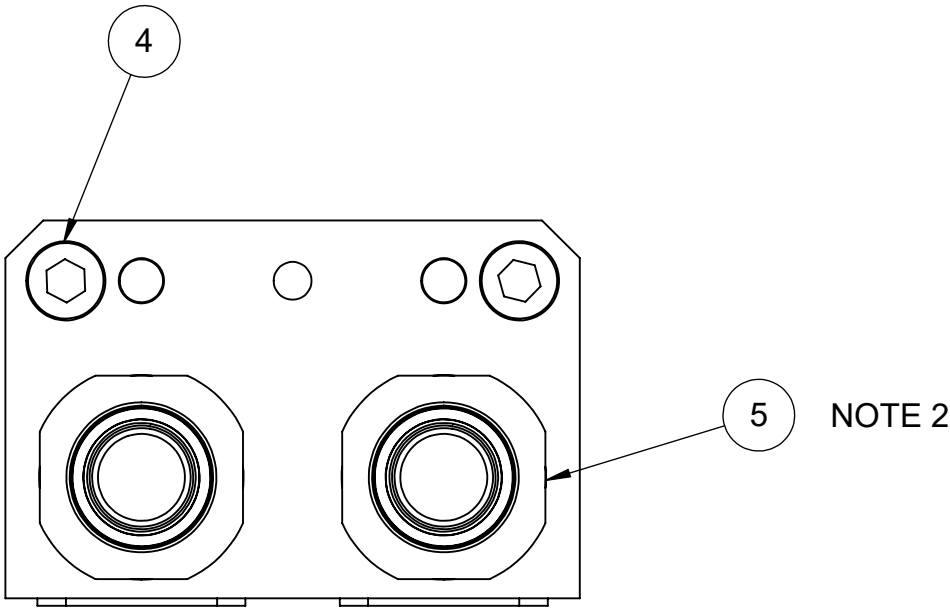
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648 Saratoga Rd. Glenville, NY 12302
www.appliedrobotics.com

TITLE:
S-EM-R-U-2VE1/2BS-B

SIZE	DRAWING NUMBER	REV
C	0603-C13A	02
Weight: 0.62 kg	RoHs COMPLIANT:	SHT. 1 OF 1

REVISIONS						
ZONE	REV	DESCRIPTION	DR	CHK	DATE	ECR/ESR NO.
	01	ITEM #2 0908-C08N WAS 0302-C45N	RM	JV	10/06/2010	WZEH-89WPGQ
	02	UPDATED 0908-C08N, ADDED 1800480P & 1800481P	PS	TM	09/24/2018	DSCZ-B36RF7



7	1	1800481P	LABEL, WATER OUT NAMEPLATE
6	1	1800480P	LABEL, WATER IN NAMEPLATE
5	2	0509-C38A	LPF-08F-SS-EXTENDED
4	2	48038	SCR, SOC HD CAP M6 X 20 (SS)
3	2	41580	DOWEL, M6 X 12 (HARD STL) m6
2	2	0908-C08N	ADAPTER, BULKHEAD 1/2 BSP BRASS ROTATABLE
1	1	0508-C93N	PLATE MOUNT, BULKHEAD EXTENDED
ITEM NO.	QTY	PART NO.	DESCRIPTION

THIRD ANGLE PROJECTION

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DIM. AND TOLERANCING IN ACCORDANCE WITH ASMEY 14.5-2009

METRIC

UNLESS OTHERWISE SPECIFIED:

UNTOLERANCED DIMS ARE BASIC

	.25	A	B	C
	φ .25(M)	A	B	C

ALL HOLE DIAMETERS +/- 0.25

INTERNAL RADII & BROKEN EDGES TO BE .13-.38

ALL SURFACE FINISHES 1.6Ra

MAT'L: Material <not specified>

SURFACE TREATMENT:

DR: T. MARCELLA 03/06/2006

CHK: J. VALLELUNGA

ENG: T. MARCELLA

MFG: T. DUFF

QC: J. SERFILIPPI

3D MODEL NUMBER: 0603-C14A

SCALE: 1:1
DO NOT SCALE DRAWING

ISO 9001 REGISTERED

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TITLE: S-EM-T-U-2VE1/2BS-B

SIZE	DRAWING NUMBER	REV
C	0603-C14A	02

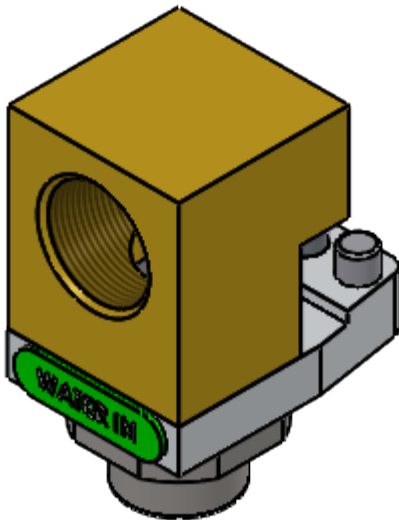
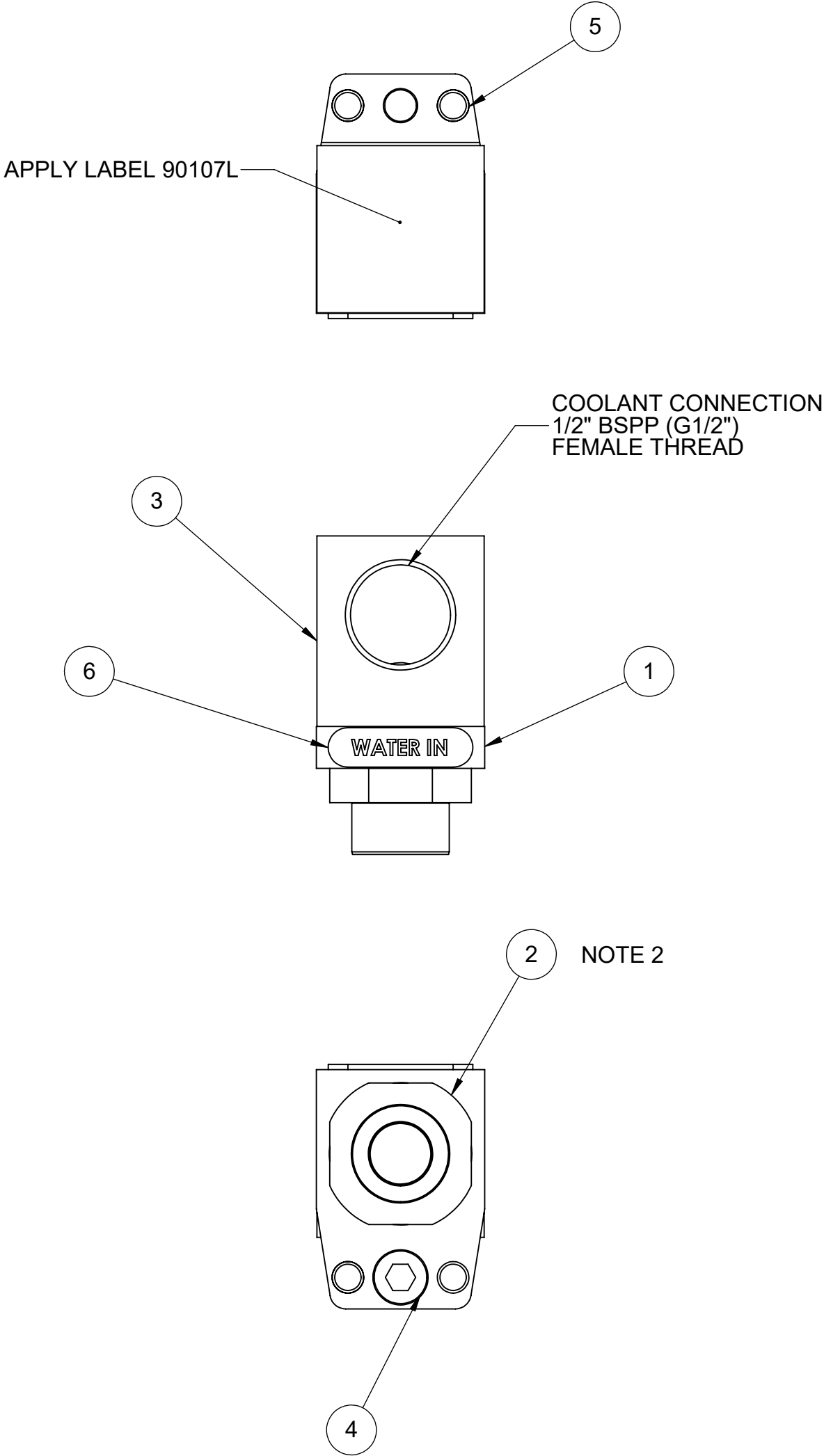
Weight: 0.62 kg	RoHs COMPLIANT:	SHT. 1 OF 1
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NOTES

1. ALL DOWELS ARE INSERTED TO 50% OF OVERALL LENGTH (+/- .5MM) UNLESS OTHERWISE NOTED.
2. TORQUE TO 45 in/lbs.

PRINT DATE
10/2/2018

REVISIONS						
ZONE	REV	DESCRIPTION	DR	CHK	DATE	ECR/ESR NO.
	00	RELEASED FOR MANUFACTURING	PS	JV	10/19/2015	
	01	1800028M WAS 0908-C08N	PS	TM	03/14/2018	PSLI-AWFTFE
	02	0908-C08N WAS 1800028M, ADDED ARI #1800480P, DESCRIPTION WAS ER125-U-1VE1/2BS-B	PS	TM	09/24/2018	DSCZ-B36RF7



6	1	1800480P	LABEL, WATER IN NAMEPLATE
5	2	49066	DOWEL, M6 X 10 (HARD STL) m6
4	1	48037	SCR, SOC HD CAP M6 X 16 (SS)
3	1	0908-C08N	ADAPTER, BULKHEAD 1/2 BSP BRASS ROTATABLE
2	1	0509-C39A	LPF-08M-SS-EXTENDED
1	1	1505-C23N	PLATE MOUNT, BULKHEAD ER/T125-U EXT

ITEM NO.	QTY	PART NO.	DESCRIPTION					
THIRD ANGLE PROJECTION		METRIC UNLESS OTHERWISE SPECIFIED: UNTOLERANCED DIMS ARE BASIC .25 A B C φ .25(M) A B C ALL HOLE DIAMETERS +/- 0.25 INTERNAL RADII & BROKEN EDGES TO BE .13-.38 ALL SURFACE FINISHES 1.6Ra MAT'L: Material <not specified>	DR: P. SLAVINSKI	 648 Saratoga Rd. Glenville, NY 12302 www.appliedrobotics.com				
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			ENG: P. SLAVINSKI					
			MFG: C. BEST					
			QC: M. DUDNATH				3D MODEL NUMBER: 1505-C21A	
DIM. AND TOLERANCING IN ACCORDANCE WITH ANSI Y14.5M-1994		SURFACE TREATMENT:	ISO 9001 REGISTERED		SIZE C	DRAWING NUMBER 1505-C21A		REV 02
					Weight: .31 kg	RoHs COMPLIANT:	SHT. 1	OF 1

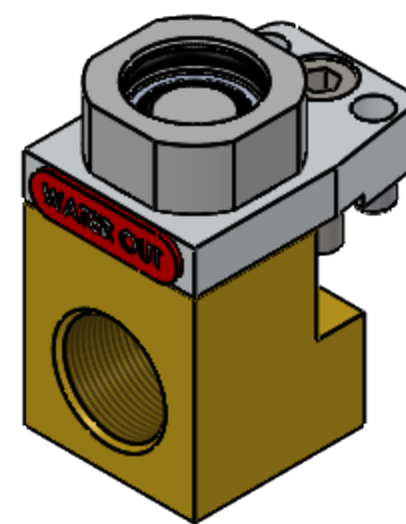
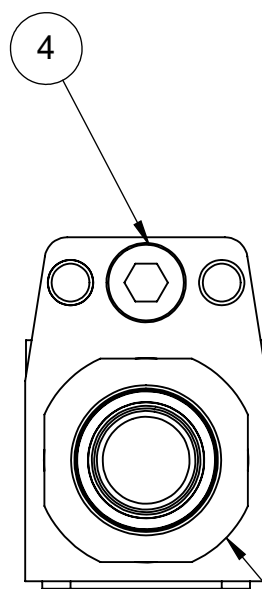
NOTES

1. ALL DOWELS ARE INSERTED TO 50% OF OVERALL LENGTH (+/- .5MM) UNLESS OTHERWISE NOTED.
2. HAND TIGHTEN FITTING. TORQUE WHEN INSTALLED ON ROBOT ASSEMBLY TO 45 in/lbs. ORIENTATION WILL BE SHOWN THERE.

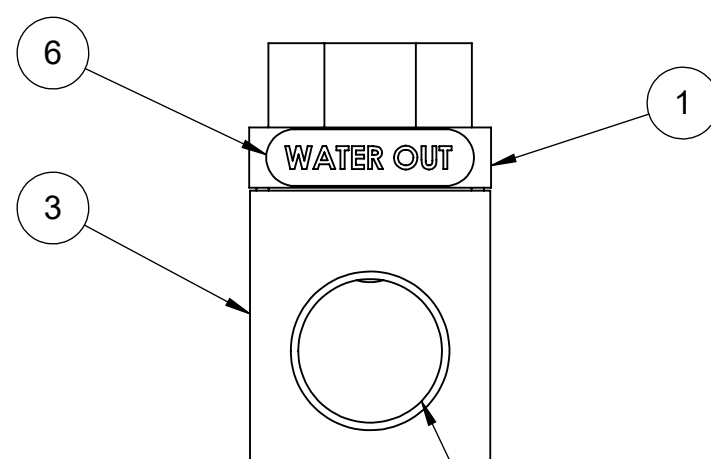
PRINT DATE
10/2/2018

SIZE C	DRAWING NUMBER 1800586A	REV 00
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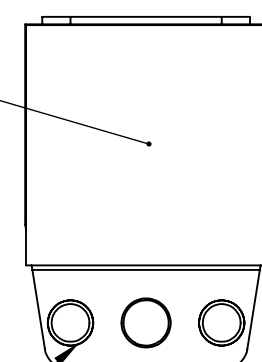
REVISIONS						
ZONE	REV	DESCRIPTION	DR	CHK	DATE	ECR/ESR NO.
	00	RELEASED FOR MANUFACTURING	PS	JV	09/11/2018	DSCZ-B36RF7



2 NOTE 2



COOLANT CONNECTION
— 1/2" BSP (G1/2")
FEMALE THREAD



APPLY LABEL 90107L.

6	1	1800481P	LABEL, WATER OUT NAMEPLATE
5	2	49066	DOWEL, M6 X 10 (HARD STL) m6
4	1	48038	SCR, SOC HD CAP M6 X 20 (SS)
3	1	0908-C08N	ADAPTER, BULKHEAD 1/2 BSP BRASS ROTATABLE
2	1	0509-C38A	LPF-08F-SS-EXTENDED
1	1	1505-C23N	PLATE MOUNT, BULKHEAD ER/T125-U EXT

ITEM NO.		Default/QUALITY		PART NO.		DESCRIPTION							
THIRD ANGLE PROJECTION				METRIC UNLESS OTHERWISE SPECIFIED: UNTOLERANCED DIMS ARE BASIC		DR: P. SLAVINSKI		AppliedRobotics™ Solutions in reach 648 Saratoga Rd. Glenville, NY 12302 www.appliedrobotics.com					
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				ENG: P. SLAVINSKI									
				MFG: C. BEST									
ALL HOLE DIAMETERS +/- .025 INTERNAL RADII & BROKEN EDGES TO BE .13-.38 ALL SURFACE FINISHES 1.6Ra				QC: M. DUDNATH		TITLE: ET125-U-01VE-1/2BSPP-B-WO							
				3D MODEL NUMBER: 1800586A									
DIM. AND TOLERANCING IN ACCORDANCE WITH ANSI Y14.5M-1994				SURFACE TREATMENT:		ISO 9001 REGISTERED		SIZE C		DRAWING NUMBER 1800586A		REV 00	
								Weight: 0.30 kg		RoHs COMPLIANT:		SHT. 1 OF 1	